Nebraska
Occupational Health Indicators

2016 ANNUAL REPORT

Department of Health & Human Services
DHHS
NEBRASKA

Nebraska Department of Health and Human Services
Occupational Safety and Health Surveillance Program
June/July 2016

Nebraska Occupational Health Indicators 2016 Report

Nebraska Department of Health and Human Services
Division of Public Health, Office of Epidemiology
Occupational Health Surveillance Program
301 Centennial Mall S
Lincoln, NE 68509

Report Prepared By
Derry Stover, MPH, Epidemiologist
Ketki Patel, MD, PhD, MPH, Epidemiologist

For more information about this report, or for questions or comments, please contact the Occupational Health Surveillance Program at 402-471-2937 or visit http://dhhs.ne.gov/publichealth/occhealth/

Abbreviations
List of terms and abbreviations used in this report:

ABLES	Adult Blood Lead Epidemiology and Surveillance
BLS	U.S. Bureau of Labor Statistics
CBP	County Business Patterns
CFOI	Census of Fatal Occupational Injuries
CSTE	Council of State and Territorial Epidemiologists
CPS	Current Population Survey
DHHS	Nebraska Department of Health and Human Services
FTE	Full-time Equivalent Worker
MSD	Musculoskeletal Disorder
NASI	National Academy of Social Insurance
NIOSH	National Institute for Occupational Safety and Health
OHI	Occupational Health Indicator
OSHA	Occupational Safety and Health Administration
SOII	Survey of Occupational Injuries and Illnesses

This report was supported by Grant Number 5U60OH010897 from CDC–NIOSH. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC–NIOSH.

Contents

Executive Summary

Each year, thousands of workers in Nebraska experience a work-related injury or illness. These events have significant impacts on workers and their families, employers, and the state of Nebraska. A safe and healthy workforce supports Nebraska's economy and helps Nebraskans live healthier lives.

The Nebraska Occupational Health Surveillance Program conducts occupational health surveillance for the State of Nebraska. We use standardized measures called Occupational Health Indicators for tracking work-related injuries, illnesses, deaths, and other aspects of worker health and safety. Indicators are calculated using methods developed by the Council of State and Territorial Epidemiologists (CSTE), and they help states evaluate and compare occupational health data.

The following annual report presents a summary of Occupational Health Indicators for Nebraska. For most indicators, data are presented for years 2009-2014. Data summarizing the United States is also provided when available, however direct, comparisons for some indicators are limited due to differences in industries and populations. More information about Occupational Health Indicators, including detailed methodologies and limitations are on the CSTE Website at http://www.cste.org/group/OHIndicators.

Highlights of the report are listed below:

Employment Trends

- Nebraska's overall employed population grew by 46,000 workers during 2009 to 2014.
- The proportion of Nebraska's employed population aged 65 years or older increased to 6.5% in 2014, up from 5.1% in 2009.
- The proportion of Nebraska's employed population that were of Hispanic origin increased to 9.9%, up from 7.4% in 2009.

Nebraska Compared to the United States

- Nebraska had higher rates of fatal work-related injuries and nonfatal injuries and illnesses compared to the national rates during 2009 to 2014.
- Nebraska's rate of work-related musculoskeletal disorders was higher than the national average rate in 2014.
- The average amount of workers' compensation benefits paid per covered worker in Nebraska was lower than the national average amount.

Indicator Trends

- The work-related severe traumatic injury hospitalization rate nearly doubled during 2009 to 2014.
- During 2009 to 2014, there was a 15% decrease in the nonfatal occupational injury and illness rate.
- The age-standardized pneumoconiosis hospitalization rate decreased by 39% during 2009 to 2014.
- The work-related musculoskeletal disorder rate decreased by 10% during 2009 to 2014.

Introduction

Work is an important determinant of a person's health. People who work spend nearly half of their waking lives either working or commuting to work. Many workers face job-related hazards and exposures that impact their risk of a work-related injury, illness, or disease.

Significant improvements in workplace health and safety have occurred over the past several decades, yet workers continue to suffer deaths, injuries, and illnesses. In the United States, more than 3.6 million nonfatal workplace injuries and illnesses were reported by private industry employers, and 4,679 worker fatalities occurred in 2014, according to the U.S. Bureau of Labor Statistics. There is a significant economic impact of these incidents. The total estimated costs of work-related injuries and illnesses in the United States was an estimated $250 billion per year in 2007. [1]

The Nebraska Occupational Health Surveillance Program is funded by the National Institute for Occupational Safety and Health (NIOSH), an institute in the Centers for Disease Control and Prevention (CDC). The main goal of the program is to prevent work-related injuries, illnesses, and hazards through occupational health surveillance, which is a type of public health surveillance. [2] Occupational health surveillance helps determine the where, how, and why workers get sick or injured on the job. It involves the collection, analysis, interpretation, and dissemination of occupational illness and injury data. Nebraska is one of 26 states funded by NIOSH to conduct state-based occupational health surveillance.

To help states assess and compare occupational health and safety data, NIOSH and the Council of State and Territorial Epidemiologists (CSTE) developed a standardized set of Occupational Health Indicators in 1999 (4). Occupational Health Indicators are specific measures of a work-related injury or illness or factors associated with occupational health, such as workplace exposures or interventions.

The following annual report presents a summary of Occupational Health Indicators for Nebraska. For most indicators data are shown for years 2009 to 2014, however, the most recent year data was available for some indicator was 2013. Occupational Health Indicators are an important tool for assessing the status of worker health and safety and for monitoring progress over time. Stakeholders can use this information to guide prevention and intervention efforts for reducing occupational injuries and illnesses and for improving the health and safety of Nebraska workers.

Methods

Data used to calculate Occupational Health Indicators (OHIs) are drawn from several sources, such as national surveys, census counts, and state-based health records. At the national level, these data sources include but are not limited to the U.S. Bureau of Labor Statistics (BLS) Geographic Profile of Employment, Survey of Occupational Injuries and Illnesses (SOII), and Census of Fatal Occupational Injuries (CFOI). State-based data sources include Nebraska hospital discharge data, workers' compensation records, cancer registry, and death certificate data.

Indicators reported here were calculated using guidelines published in the CSTE document *Occupational Health Indicators: A Guide for Tracking Occupational Health Conditions and Their Determinants.* Each

[1] Leigh JP. Economic burden of occupational injury and illness in the United States. Milbank Q. 2011 Dec;89(4):728–72.
[2] Public health surveillance is the ongoing, systematic collection, analysis, interpretation, and dissemination of health data used for planning, implementation, and evaluation of public health practice.

indicator is calculated using a standardized methodology, which is described in detail in the guidance document. The Occupational Health Indicator guidance document is available for download on the CSTE website at http://www.cste.org/group/OHIndicators and contains more information about each indicator, including data sources, methodologies, limitations, and recommendations.

Limitations and Considerations

Data presented represent information known at the time of publication, and data may be revised by Nebraska DHHS or other external data providers. Data collection methods can vary between years and between states, and data for the United States might not include data from all 50 states. These differences may limit direct comparisons between years and between Nebraska and national data for some indicators.

Data in this report do not necessarily capture the full spectrum of occupational illnesses and injuries, and some indicators are not shown. Other factors should be considered in interpretation of this data, including:

- Underreporting of occupational injuries and illnesses by employees and employers;
- Inadequate recognition of occupational injuries and illnesses by health care providers;
- Difficulties in attributing diseases with long latency from time of exposure to disease manifestation and/or from multifactorial causes (e.g., silicosis, lung cancer);
- Possible exclusion of at-risk populations from surveillance (e.g., self-employed, military);
- Misclassification and variations in coding the causes of injury, illness or death;
- Differences in underlying populations at risk ("denominators").

There are limitations and considerations for the data sources used for each Occupational Health Indicator, which are not described in detail in this report. For more information on these limitations and considerations, refer to the CSTE Occupational Health Indicator guidance document available for download at http://www.cste.org/group/OHIndicators.

Nebraska Employment Demographics

Employed Persons 16 Years or Older by Demographic Characteristics, Nebraska, 2009 and 2014

Indicator Name	2009	2014
Total number of employed persons 16 years or older	937,000	983,000
Percentage of workforce unemployed	4.6	3.3
Percentage of employment self-employed	8.6	6.8
Percentage of employment in part-time jobs	19.5	18.1
Percentage of employment by number of hours worked per week		
<40 hours	40.3	33.6
40 hours	28.0	35.9
41+ hours	31.8	30.6
Percentage of employment by sex		
Males	51.9	52.5
Females	48.1	47.4
Percentage of employment by age group		
16 to 17	2.4	2.0
18 to 64	92.5	91.5
65+	5.1	6.5
Percentage of employment by race		
White	92.7	91.6
Black	4.1	4.0
Other	3.2	4.5
Percentage of employment by Hispanic Origin	7.4	9.9
Percentage of employment by industry		
Agriculture and Related	4.2	4.6
Construction	5.5	6.9
Education and Health Services	23.5	23.8
Financial Activities	6.9	7.1
Information	2.3	1.6
Leisure and Hospitality	7.4	8.6
Manufacturing - Durable goods	5.8	5.1
Manufacturing - Non-durable goods	6.1	6.9
Mining	0.1	0.1
Other Services	3.6	4.5
Professional and Business Services	8.6	8.3
Public Administration	4.2	3.7
Transportation and Utilities	5.4	4.8
Wholesale and Retail Trade	16.5	14.1
Percentage of employment by occupation		
Construction and Extraction	4.7	5.0
Farming, Fishing, and Forestry	1.1	1.8
Installation, Maintenance, and Repair	3.4	2.8
Management, Business, and Financial Operations	15.4	15.6
Office and Administrative Support	13.2	11.7
Production	8.0	8.7
Professional and Related Occupations	21.5	21.3
Sales and Related Occupations	10.9	10
Service	15.6	17.4
Transportation and Material Moving	6.1	5.7

About the Data

Data Source: Bureau of Labor Statistics, Geographic Profiles of Employment and Unemployment. Percentages may not sum to 100 due to rounding. Data represents civilian employment. For additional information about methodology and limitations, see Page 6.

Fatalities

Fatal Work-Related Injuries

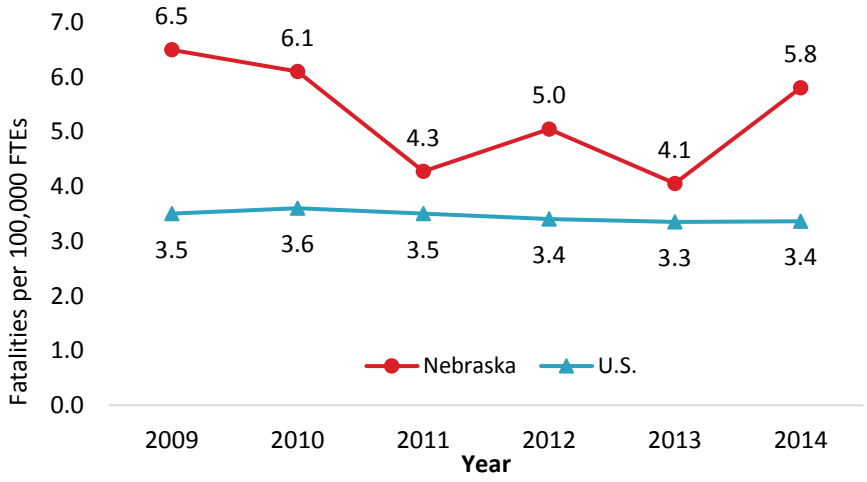
A fatal work-related injury is an injury occurring at work that results in death. Fatal work-related injuries are tracked by the Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI). The CFOI collects information on fatalities that occur in the private sector, public sector, small farms, and other industries.

In 2014, the BLS CFOI reported 55 fatal work-related injuries occurred in Nebraska, which was the highest number since 2010. Nearly half of all fatalities were due to transportation incidents, and about 30% of all deaths occurred among workers in agriculture, forestry, fishing and hunting industry. The 2014 fatality rate was 5.8 per 100,000 full-time equivalent workers (FTEs). Nebraska's worker fatality rate is higher than the national average rate.

Number of fatal work-related injuries, Nebraska, 2009-2014

Indicator	Year					
	2009	2010	2011	2012	2013	2014
Total number of fatal work-related injuries	57	54	39	48	39	55

Rate of fatal work-related injuries, Nebraska and U.S., 2009-2014



About the Data

Data Sources: BLS, Census of Fatal Occupational Injuries (numerator); BLS, Current Population Survey (denominator). Rates may not match BLS published rates due to differences in the denominator. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on worker fatalities in Nebraska, visit the BLS CFOI website at http://www.bls.gov/iif/oshstate.htm.

Nonfatal Injuries and Illnesses

Nonfatal Work-Related Injuries and Illnesses

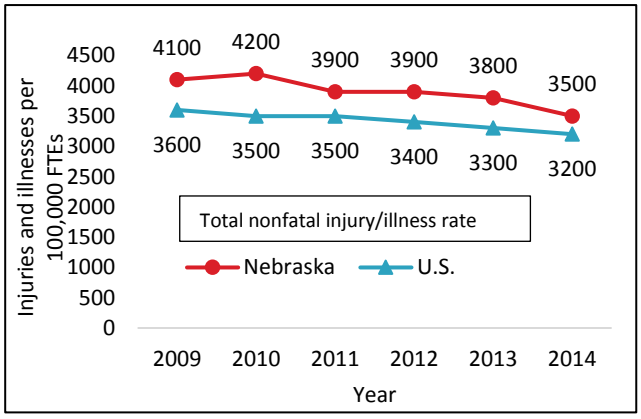
Nonfatal work-related *injuries* result from events such as falls, amputations, burns, or assaults. Work-related *illnesses* are typically the result of long-term exposures to workplace chemicals, physical hazards, or repeated strain or stress. Nonfatal work-related injury and illness data are collected by the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII). The SOII is a survey of establishments and represents estimates of injuries and illnesses reported by employers.

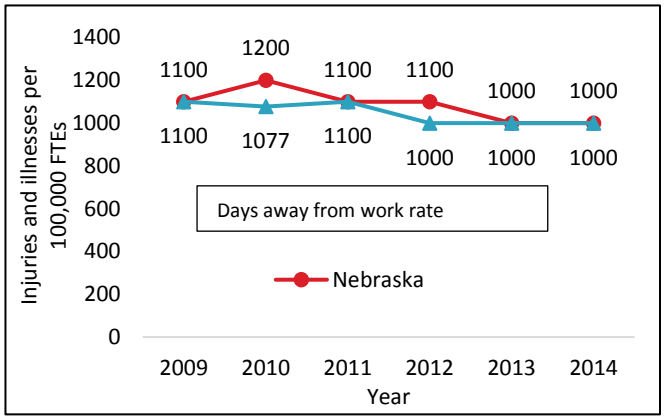
In 2014, an estimated 23,100 work-related injuries and illnesses were reported by Nebraska's private sector employers, which was lower than reported in 2013. Out of all injuries and illnesses in 2014, 6,600 (29%) required days away from work. Nebraska's estimated work-related injury and illness rate was 3,500 per 100,000 full-time equivalent (FTE) workers in 2014. The rate for all nonfatal injuries and illnesses and the rate for cases with days away from work followed a general decreasing trend since 2009. However, Nebraska's nonfatal injury and illness rate among private sector employers remain higher than the U.S. rate.

Estimated number of nonfatal work-related injuries and illnesses reported by private sector employers, Nebraska, 2009-2014

Indicator	Year					
	2009	2010	2011	2012	2013	2014
Total number of work-related injuries and illnesses	25,700	25,700	23,800	24,300	24,700	23,100
Number of cases involving days away from work	7,100	7,400	6,700	6,800	6,700	6,600

Estimated rate of total nonfatal work-related injuries and illnesses reported by private sector employers, Nebraska and U.S., 2009-2014





About the Data

Data Sources: BLS Survey of Occupational Injuries and Illnesses (numerator & denominator). Differences in industry concentration and sample sizes may limit state-level data comparisons with national estimates. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on nonfatal occupational injuries and illnesses in Nebraska, visit the BLS Survey of Occupational Injuries and Illnesses website at http://www.bls.gov/iif/oshstate.htm.

Hospitalizations

Work-related injuries and illnesses resulting in an inpatient hospitalization are often serious and lead to costly medical bills and adverse health outcomes. Hospital discharge data are used to track work-related inpatient hospitalizations, severe traumatic injuries hospitalizations, and burn hospitalizations. A hospitalization is considered work-related if the primary payer is 'workers' compensation' and the patient is a Nebraska resident aged 16 years or older. Tracking total work-related hospitalizations helps document the burden and trends of occupational injuries and illnesses and is useful for targeting and evaluating the impact of prevention efforts over time.

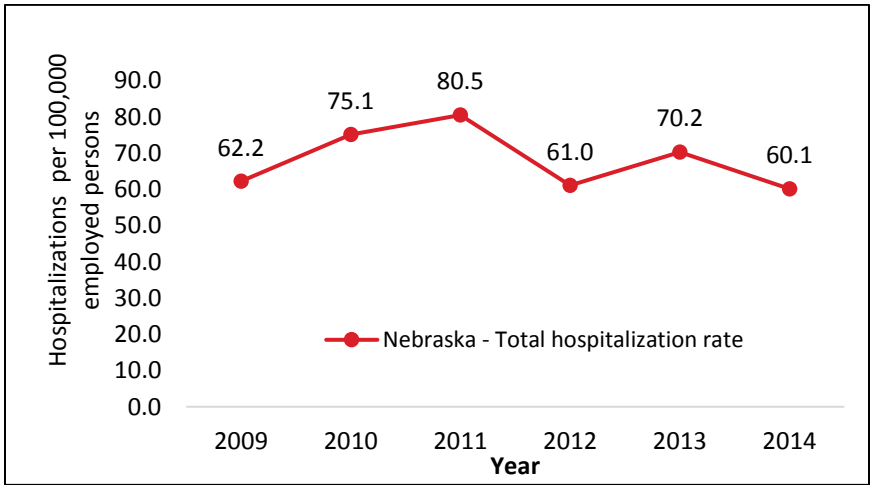
All Work-Related Hospitalizations

According to Nebraska hospital discharge data, there were 591 total work-related inpatient hospitalizations in 2014, which was fewer than in 2013. The 2014 rate of all work-related inpatient hospitalizations was 60.1 per 100,000 employed persons. The rate of hospitalizations peaked in 2011, and the 2014 rate was the lowest since 2009.

Number of all work-related hospitalizations, Nebraska, 2009-2014

Indicator	Year					
	2009	2010	2011	2012	2013	2014
Number of all work-related hospitalizations	583	698	775	600	694	591

Rate of all work-related hospitalizations, Nebraska, 2009-2014



About the Data

Data Source: Nebraska Hospital Association, Hospital Discharge Data (numerator); BLS Current Population Survey (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about work-related hospitalization, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Work-Related Severe Traumatic Injury Hospitalizations

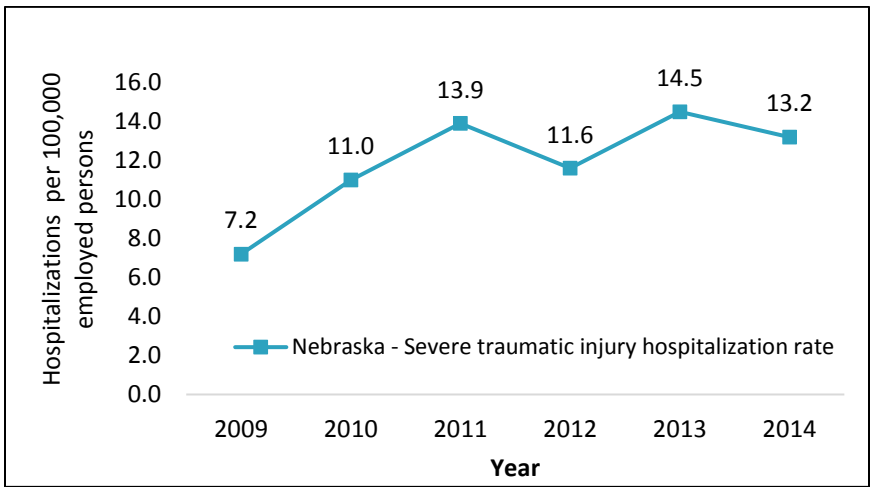
Acute work-related trauma is a leading cause of death and disability for workers in the United States. Severe traumatic injury can lead to long-term pain and disability and is costly for workers' compensation systems and society as a whole. Minor and non-severe injuries are impacted by yearly changes in hospitalization practices and workers' compensation coverage. Therefore, focusing on severe injuries can help decrease the impact of changing utilization and service delivery patterns on observed injury trends.

In 2014, 130 work-related hospitalizations in Nebraska were due to severe traumatic injuries. The 2014 rate of hospitalizations for severe traumatic injuries was 13.2 per 100,000 employed persons. While the 2014 rate was slightly lower than in 2013, an overall increasing trend was observed for the rate of severe traumatic injury hospitalizations since 2009.

Number of work-related hospitalizations for severe traumatic injury, Nebraska, 2009-2014

Indicator	Year					
	2009	2010	2011	2012	2013	2014
Number of work-related hospitalizations for severe traumatic injury	67	102	134	114	143	130

Rate of work-related hospitalizations for severe traumatic injury, Nebraska, 2009-2014



About the Data

Data Source: Nebraska Hospital Association, Hospital Discharge Data (numerator); BLS Current Population Survey (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about work-related hospitalizations, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Work-Related Burn Hospitalizations

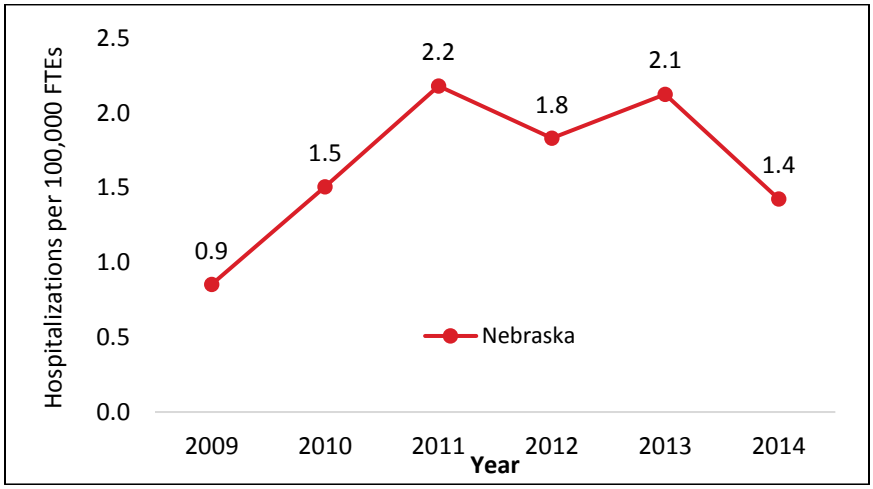
Work-related burns are injuries to tissues caused by contact with heat, chemicals, electricity, friction, or radiation. Burns are among the most expensive work-related injuries to treat and can result in significant disability.

According to Nebraska hospital discharge data, there were 14 work-related burn hospitalizations in 2014. The 2014 rate for work-related burn hospitalizations was 1.4 per 100,000 employed persons. While the 2014 rate of work-related burn hospitalizations was decreased from the previous year, the rate was higher compared to 2009.

Number of work-related burn hospitalizations, Nebraska, 2009-2014

Indicator	Year					
	2009	2010	2011	2012	2013	2014
Number of burn hospitalizations	8	14	21	18	21	14

Rate of work-related burn hospitalizations, Nebraska, 2009-2014



About the Data

Data Source: Nebraska Hospital Association, Hospital Discharge Data (numerator); BLS Current Population Survey (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about work-related hospitalizations, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Amputations

An amputation occurs when an individual experiences a full or partial loss of a protruding body part, such as an arm, hand, finger, leg, foot, or toe. Work-related amputations can lead to permanent disability, reduced earning potential and job skills, and can significantly affect a person's quality of life. Nebraska tracks work-related amputations using occupational survey data and workers' compensation claims data.

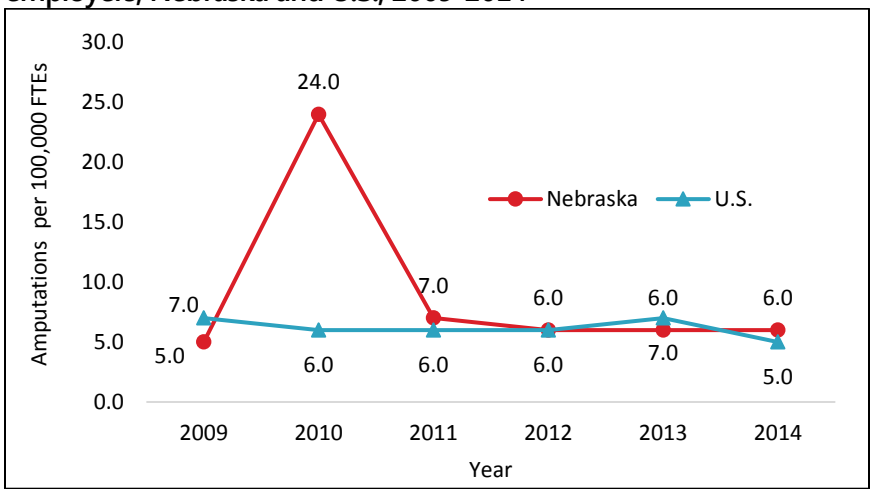
Work-Related Amputations Reported by Employers

Work-related amputations reported by employers are tracked using the Bureau of Labor Statistics' (BLS) Survey of Occupational Injuries and Illnesses (SOII). The SOII is a national survey of establishments and represents injuries and illnesses reported by employers. In 2014, an estimated 40 work-related amputations involving days away from work were reported by private sector employers in Nebraska. The estimated rate in 2014 was 6.0 per 100,000 full-time equivalent workers (FTEs), which was slightly higher than the U.S. average rate. Except for an outlier in 2010, the rate has remained consistent since 2009.

Estimated number of work-related amputations involving days away from work reported by private sector employers, Nebraska, 2009-2014

Indicator	2009	2010	2011	2012	2013	2014
Number of amputations reported by employers	30	150	40	40	40	40

Estimated rate of work-related amputations involving days away from work reported by private sector employers, Nebraska and U.S., 2009-2014



About the Data

Data Sources: BLS, Survey of Occupational Injuries and Illnesses (numerator); BLS, Current Population Survey (denominator). Differences in industry concentration and sample sizes limit state-level data comparisons with national estimates. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on work-related amputations reported by employers, visit http://www.bls.gov/iif/home.htm.

Work-Related Amputations Reported to Workers' Compensation

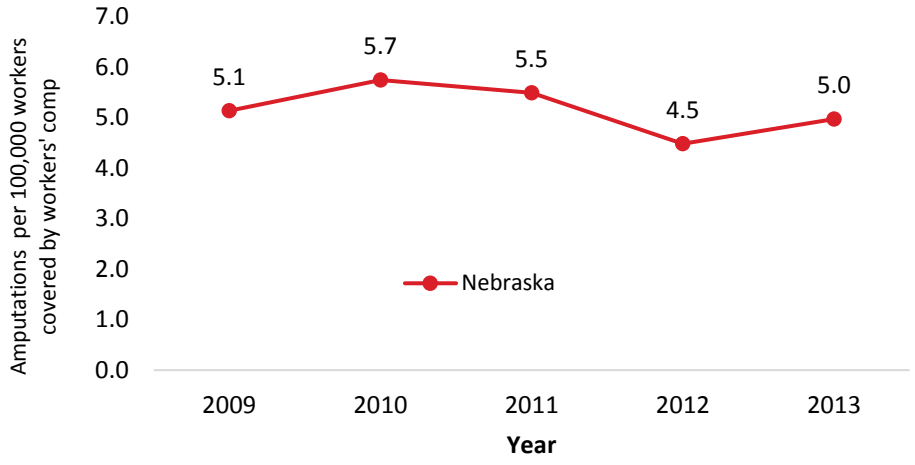
Work-related amputations in Nebraska are also tracked using workers' compensation claims. Work-related amputations claims are reported to the Nebraska Workers' Compensation Court. Amputations with lost work-time are amputation injuries in which wage replacement payments are paid by workers' compensation.

In 2014, 60 amputations with lost work-time were reported to workers' compensation. The amputation rate was 5.0 per 100,000 workers covered by workers' compensation, and the rate has remained relatively consistent since 2009.

Number of work-related amputations with lost work-time reported to workers' compensation, Nebraska, 2009-2014

Indicator	2009	2010	2011	2012	2013	2014
Number of amputations reported to workers' compensation	45	50	48	40	45	60

Rate of work-related amputations with lost work time reported to workers' compensation, Nebraska, 2009-2013



About the Data

Data Sources: Nebraska Workers' Compensation Court, Claims data (numerator); National Academy of Social Insurance (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on work-related amputations, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Musculoskeletal Disorders

Musculoskeletal disorders (MSDs) are injuries or disorders of muscles, tendons, nerves, ligaments, joints, or spinal discs. Work-related MSDs can arise from repetitive motions, awkward postures, use of vibrating tools or equipment, and manual handling of heavy loads. MSDs can also be caused by single or traumatic events such as falls.

Work-Related Musculoskeletal Disorders Reported by Employers

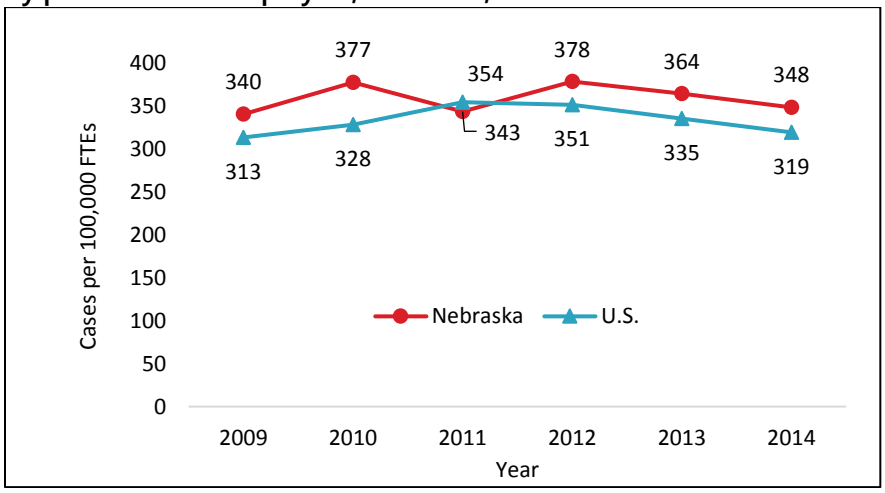
Nebraska tracks work-related MSDs using data from the Bureau of Labor Statistics' (BLS) Survey of Occupational Injuries and Illnesses (SOII). The SOII is a national survey of establishments and represents injuries and illnesses reported by employers.

An estimated total of 2,300 work-related musculoskeletal disorders (MSDs) with days away from work were reported by private sector employers in Nebraska in 2014. An estimated 900 cases were MSDs of the back, 800 cases were MSDs of the neck, shoulder, and upper extremities, and 100 were Carpal Tunnel Syndrome cases. The Nebraska rate of all MSDs decreased in 2014, as did the rate for MSDs of the neck, shoulder and upper extremities and carpal tunnel cases. In 2014, Nebraska rate for all MSDs was higher than the U.S. rate, and the rates were also higher for all sub-types of MSDs.

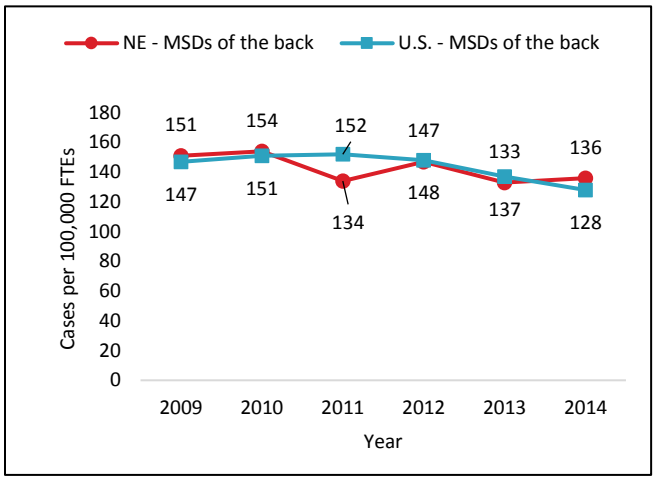
Estimated number of work-related musculoskeletal disorders (MSDs) with days away from work reported by private sector employers, Nebraska, 2009-2014

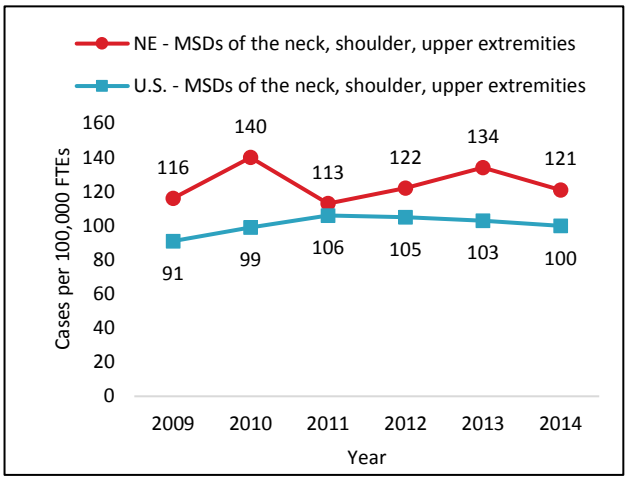
	Year					
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Number of all musculoskeletal disorders	2,140	2,330	2,120	2,360	2,330	2,300
Number of musculoskeletal disorders of the back	950	950	830	920	860	900
Number of musculoskeletal disorders of the neck, shoulder & upper extremities	730	870	700	760	860	800
Number of Carpal Tunnel Syndrome cases	90	130	140	100	170	100

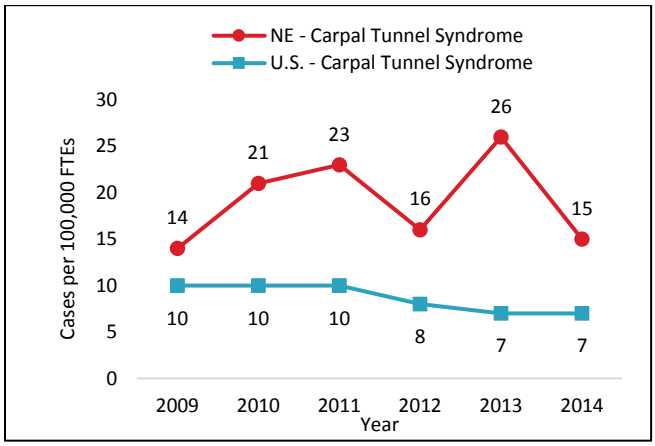
Estimated rate of work-related musculoskeletal disorders (MSDs) with days away from work reported by private sector employers, Nebraska, 2009-2014



Estimated rate of work-related MSDs reported by private sector employers, by MSD type, Nebraska and the U.S., 2009-2014







About the Data

Data Sources: BLS Survey of Occupational Injuries and Illnesses (numerator); BLS Current Population Survey (denominator). Differences in industry concentration and sample sizes limit state-level data comparisons with national estimates. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on work-related musculoskeletal disorders (MSDs) in Nebraska, visit http://www.bls.gov/iif/home.htm

Carpal Tunnel Syndrome Cases Reported to Workers' Compensation

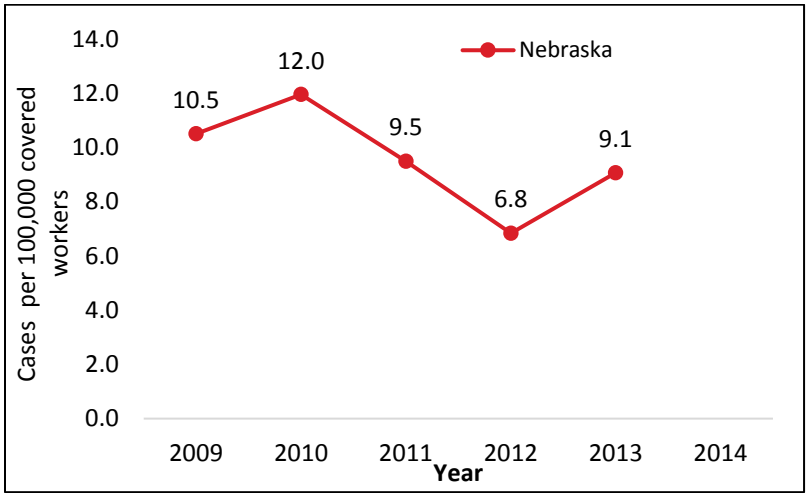
Carpal Tunnel Syndrome is a musculoskeletal disorder (MSD) characterized by burning, tingling, or numbness in the fingers and difficulty gripping or holding objects. Carpal Tunnel Syndrome occurs when the median nerve is compressed at the wrist. Workplace factors that can cause or aggravate this syndrome include direct trauma, repetitive forceful motions or awkward postures of the hands, and use of vibrating tools or equipment. Nebraska tracks Carpal Tunnel Syndrome cases using workers' compensation claims data. Carpal Tunnel Syndrome cases with lost work-time are counted if the claim results in wage replacement payments are paid by workers' compensation.

Preliminary 2013 data from the Nebraska Workers' Compensation Court show 59 Carpal Tunnel Syndrome cases with lost work-time were reported to workers' compensation. Nebraska's 2013 Carpal Tunnel Syndrome rate was 9.1 per 100,000 workers' covered by workers' compensation.

Number of Carpal Tunnel Syndrome cases with lost work-time reported to workers' compensation, Nebraska, 2009-2014

	Year					
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Number of Carpal Tunnel Syndrome cases with lost work-time reported to workers' compensation	92	104	83	61	82	59

Rate of Carpal Tunnel Syndrome cases with lost work-time reported to workers' compensation, Nebraska, 2009-2014



About the Data

Data Sources: Nebraska Workers' Compensation Court, Claims data (numerator); National Academy of Social Insurance (denominator). 2014 data are preliminary and may be revised. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on Carpal Tunnel Syndrome in Nebraska, visit http://www.bls.gov/iif/home.htm

Respiratory Illness and Disease

Respiratory illnesses and diseases can be caused by exposures in the workplace. These illnesses include diseases such as cancer, restrictive lung disease, and asthma. Many respiratory diseases take a long time to develop following exposure to the agent that caused them. Nebraska uses data from several surveillance systems to track respiratory diseases and illnesses, including pneumoconiosis, mesothelioma, and work-related asthma.

Pneumoconiosis

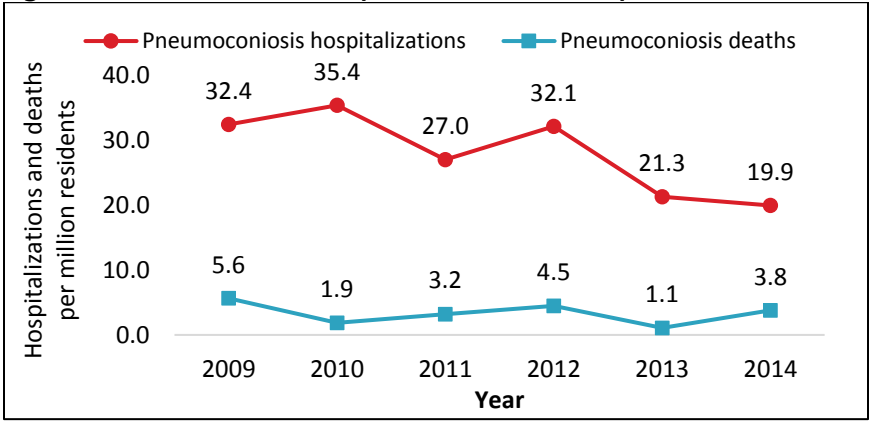
Pneumoconiosis is a category of restrictive lung diseases, and nearly all cases are caused by work-related exposures inhalation of mineral dust, such as asbestos, silica, and coal. Pneumoconiosis hospitalizations are tracked using Nebraska hospital discharge data, and pneumoconiosis deaths are tracked using Nebraska death certificate data.

In 2014, 34 work-related hospitalizations for pneumoconiosis occurred in Nebraska, of which 80% of cases (n=28) were asbestosis cases (data not shown). The age-adjusted rate of pneumoconiosis hospitalizations was 19.9 per million residents, which was the lowest rate since 2009. Six pneumoconiosis deaths occurred among Nebraska residents in 2014. The age-adjusted rate of pneumoconiosis deaths was 3.8 per million residents. There was an increase in the rate of pneumoconiosis hospitalizations from 2013 to 2014, but the rate was lower compared to the 2009 rate.

Number of pneumoconiosis hospitalizations and deaths, Nebraska, 2009-2014

	Year					
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Total number of pneumoconiosis hospitalizations	46	57	43	51	36	34
Total number of pneumoconiosis deaths	8	3	5	7	2	6

Age-standardized rate of all pneumoconiosis hospitalizations and deaths, Nebraska, 2009-2014



About the Data

Data Sources: Nebraska Hospital Association, Hospital Discharge Data (hospitalization numerator); Nebraska DHHS, Death Certificate Data (deaths numerator); U.S. Census Bureau, Population Estimates (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on occupational respiratory Illnesses and diseases in Nebraska, contact the Nebraska DHHS at http://dhhs.ne.gov/publichealth/occhealth/pages/ContactUs.aspx

Mesothelioma

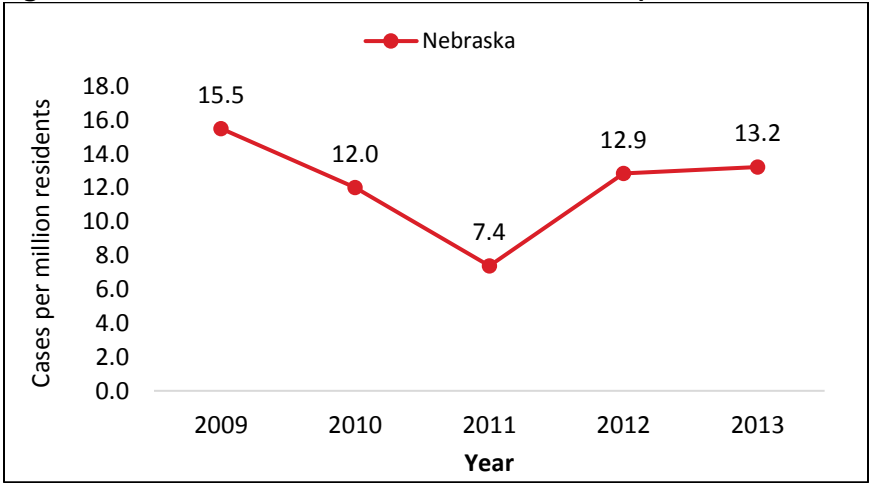
Asbestos exposure is one of the only known causes of malignant mesothelioma, which is a rare but highly fatal cancer of the thin membranes surrounding the chest or abdominal cavity. Malignant mesothelioma typically results from occupational exposure to asbestos. The Nebraska Cancer Registry data are used to determine the number of incident (new) mesothelioma cases for Nebraska residents aged 15 years or older. Because cancer is a disease of long latency, the incidence is not indicative of current exposures, as it may be many years before reductions in occupational exposures affect the incidence rate.

In 2013, 22 incident (new) mesothelioma cases were diagnosed among Nebraska residents, which was slightly higher than in 2012. The age-standardized incidence rate of mesothelioma was 13.2 per million residents in 2013, which was the highest rate since 2010.

Number of incident mesothelioma cases, Nebraska, 2009-2013

	Year				
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**
Number of new mesothelioma cases	22	19	12	21	22

Age-standardized incidence rate of mesothelioma per million residents, Nebraska, 2009-2013



About the Data

Data Sources: Nebraska DHHS, Nebraska Cancer Registry (numerator); U.S. Census Bureau, Population Estimates (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

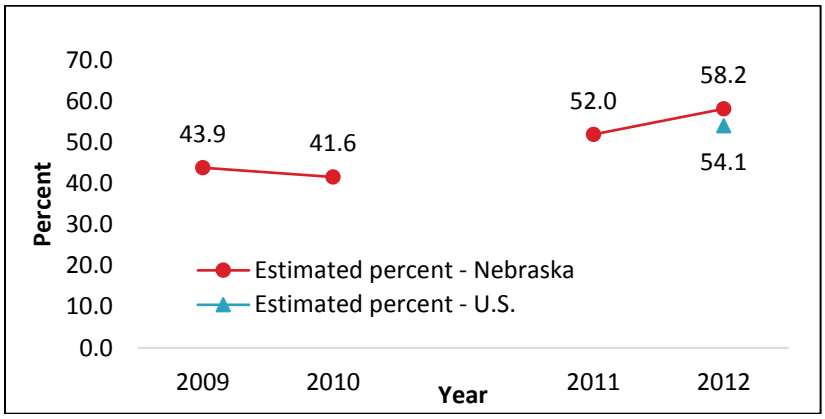
For more information on occupational respiratory Illnesses and diseases in Nebraska, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Work-Related Asthma

Asthma is a chronic inflammatory disease of the airways that affects millions of adults in the United States. Work-related asthma is asthma that has an association between asthma symptoms and the work environment and work exposures. Work-related asthma can have adverse effects on the worker, including increased morbidity, adverse socioeconomic impacts, and difficulty getting and sustaining work. Work-related asthma is tracked using the Nebraska Asthma Call-Back Survey, which is a component of the Nebraska Behavioral Risk Factor Surveillance System (BRFSS). BRFSS is a cross-sectional telephone health survey of adults aged 16 years or older.

In 2012, an estimated 58% of ever-employed adults with current asthma in Nebraska reported that their asthma was caused or made worse by exposures at work. The estimated percent of work-related asthma in Nebraska was higher in 2012 compared to 2011. Compared to United States data, the percent of work-related asthma in Nebraska was higher in 2012.

Estimated percent of ever-employed adults with current asthma who report that their asthma was caused or made worse by exposures at work, Nebraska and U.S., 2009-2012



About the Data

Data Sources: Nebraska DHHS, Asthma-Call Back Survey, BRFSS (numerator & denominator). Due to change in survey methodology, 2009-2010 data should not be compared to 2011-2012 data. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information on the Asthma Call-Back Survey, visit http://www.cdc.gov/brfss/acbs/. For more information on the Nebraska Behavioral Risk Factor Surveillance System, visit http://dhhs.ne.gov/publichealth/Pages/brfss_index.aspx.

Chemical Exposure and Poisoning

Chemical hazards and toxic substances pose a wide range of health and safety hazards. Many workers are unaware of chemicals that create potential hazards in their work environment, making them more vulnerable to exposure and injury.

Lead Exposures

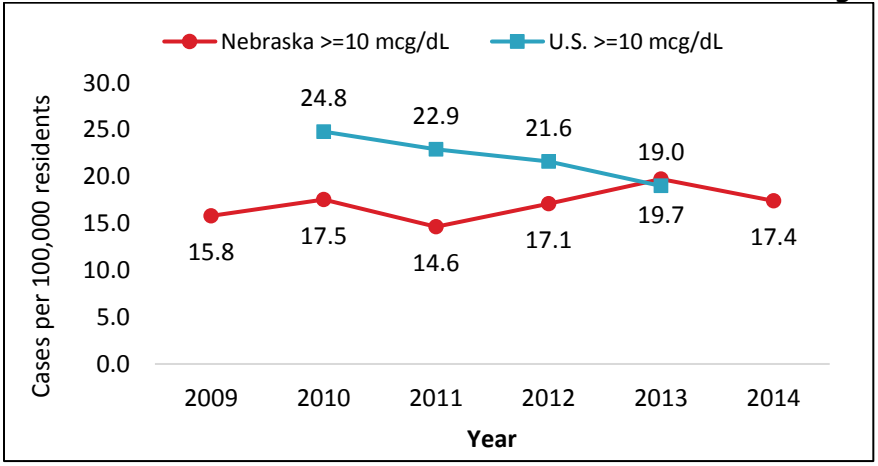
Lead poisoning among adults is typically the result of work-related exposures. Lead poisoning adversely affects multiple organ systems and can cause permanent damage, such as anemia, nervous system dysfunction, kidney damage, hypertension, decreased fertility, and miscarriage. The Centers for Disease Control and Prevention (CDC) recommends that blood lead levels among adults be less than 10 mcg/dL. Physicians and laboratories are required to report all blood lead level (BLL) tests to DHHS.

In 2014, 171 Nebraska residents had an elevated blood lead level (BLL) ≥10 mcg/dL. The prevalence rate of residents with an elevated BLL was 17.4 in 2014. The BLL prevalence rate in Nebraska was slightly lower than the U.S. rate in 2013, which is the most recent year that U.S. data are available. The overall trend for the U.S. shows a consistent decline in BLL prevalence rate. Nebraska's BLL prevalence rate in 2014 was higher compared to 2009.

Number of residents with elevated blood lead level ≥ 10 mcg/dL, Nebraska and U.S., 2009-2014

	Year					
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Residents with blood lead levels >=10 mcg/dL	148	163	141	168	195	171

Prevalence rate of residents with elevated blood lead level ≥10 mcg/dL, Nebraska and U.S., 2009-2014



About the Data

Data Sources: Nebraska DHHS, ABLES Program (numerator); BLS Current Population Survey (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about adult blood lead levels, contact the Nebraska ABLES Program at dhhs.ne.gov/publichealth/OccHealth/Pages/Lead.aspx or the CDC ABLES Program at www.cdc.gov/niosh/topics/ables/.

Pesticide Poisoning

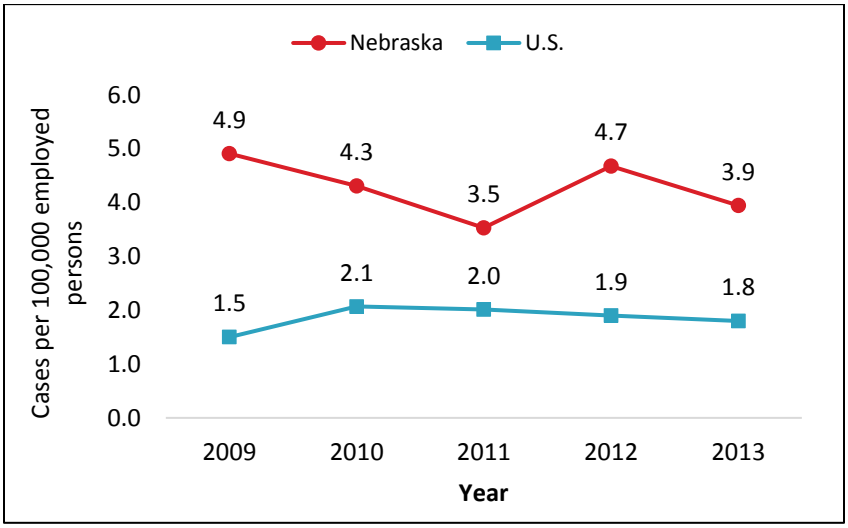
A pesticide is a substance or mixture of substances used to prevent or control undesired insects, plants, animals, or fungi. Adverse health effects can occur from human exposures to pesticides and effects can depend on the type of chemical applied, the amount used, and route of exposure. Agricultural workers, groundskeepers, fumigators, and a variety of other occupations are at risk for exposure to pesticides including fungicides, herbicides, insecticides, rodenticides, and sanitizers. Work-related pesticide poisonings are tracked using data from the American Association of Poison Control Centers.

In 2013, 39 cases of work-related pesticide poisoning were reported to poison control centers. Nebraska's work-related pesticide poisoning rate was 3.9 per 100,000 employed persons. Nebraska's work-related pesticide poisoning was higher than in U.S. since 2009, and in 2013 Nebraska had the fifth highest rate of work-related pesticide poisoning among U.S. states.

Number of acute work-related pesticide poisonings reported to poison control centers, Nebraska, 2009-2013

	Year				
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**
Number of work-related pesticide poisonings	46	40	34	46	39

Rate of acute work-related pesticide poisonings reported to poison control centers, Nebraska and U.S., 2009-2013



About the Data

Data Sources: American Association of Poison Control Centers (numerator); BLS Current Population Survey (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about work-related pesticide injury and illness, visit the Nebraska DHHS Website at http://dhhs.ne.gov/publichealth/OccHealth/Pages/Pesticides.aspx or CDC's Website at http://www.cdc.gov/niosh/topics/pesticides/overview.html.

Workers with High-Risk Occupations

Workers Employed in High Morbidity Risk Occupations

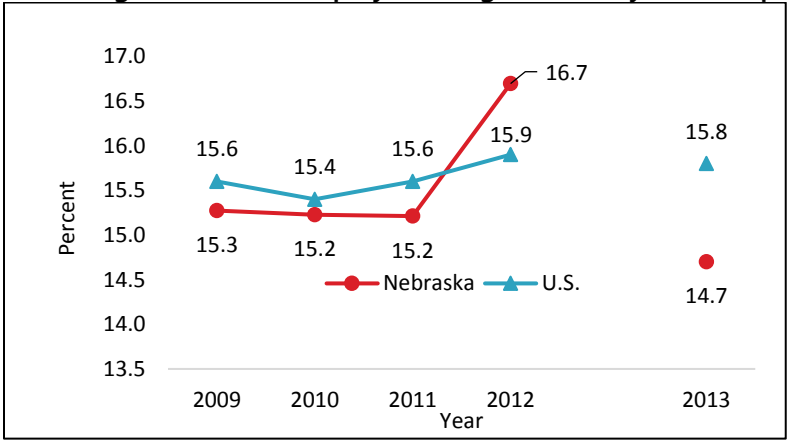
Workers with certain occupations are at a higher risk for experiencing *nonfatal* injuries and illnesses, also known as occupational morbidity. The proportion of workers employed in these high-risk occupations is an important indicator for measuring worker health and safety risks among Nebraska's workforce. Examples of occupations at high-risk for nonfatal injuries and illnesses include emergency medical technicians and paramedics, food preparation workers, police and sheriff's patrol officers, and construction laborers. High-risk occupations for nonfatal injury and illness are determined by NIOSH and are based on the Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses "days away from work" cases and employment estimates for private sector workers.

In 2013, 106,949 workers in Nebraska were employed in high morbidity risk occupations. The percent of workers in Nebraska employed in high morbidity risk occupations was 14.7% in 2013, which was lower than the in 2012. Note that in 2013, there was a change in methodology in which a new list of high-risk occupations was used. Except for in 2012, the percent of workers in high morbidity risk occupations was lower than the U.S. percent.

Number of workers employed in high morbidity risk occupations, Nebraska, 2009-2013

	Year					
Indicator	**2009**	**2010**	**2011**	**2012**	Methodology change	**2013**
Number of workers in high morbidity risk occupations	102,494	100,051	102,817	119,078		106,949

Percentage of workers employed in high morbidity risk occupations, Nebraska and U.S., 2009-2013



About the Data

Data Sources: BLS Survey of Occupational Injuries and Illnesses (numerator); BLS Current Population Survey (denominator). Due to change in methodology in 2013, direct comparisons to previous data should not be made. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about high-risk workers, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Workers Employed in High Mortality Risk Occupations

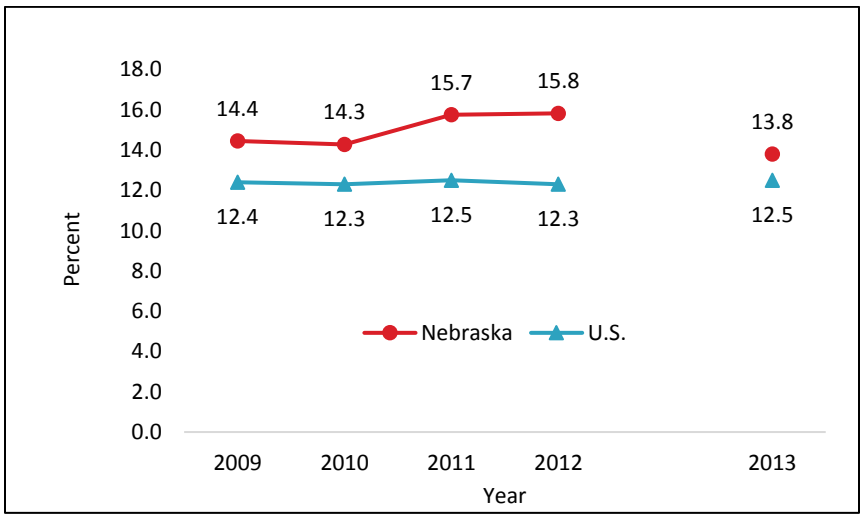
Workers with certain occupations are at a higher risk for experiencing *fatal* work-related injuries, also known as occupational mortality. Examples of high mortality risk occupations include roofers, highway maintenance workers, truck drivers, and firefighters. High mortality risk occupations are determined by NIOSH and are based on Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries and employment estimates for private sector workers.

In 2013, 117,366 workers in Nebraska were employed in high mortality risk occupations. The total percent of workers in Nebraska employed in high mortality risk occupations was 13.8% in 2013, which was lower than the 2012 percent. Note that in 2013 there was a change in methodology in which a new list of high-risk occupations was used. Nebraska's percent of workers in high mortality risk occupations was higher than the U.S. percent.

Number of workers employed in high mortality risk occupations, Nebraska, 2009-2013

	Year					
Indicator	**2009**	**2010**	**2011**	**2012**		**2013**
Number of workers in high mortality risk occupations	113,730	109,809	125,364	132,106	Methodology change	117,366

Percentage of workers employed in high mortality risk occupations, Nebraska and the U.S., 2009-2013



About the Data

Data Sources: BLS Census of Fatal Occupational Injures (numerator); BLS Current Population Survey (denominator). Due to change in methodology in 2013, direct comparisons to previous data should not be made. For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about high-risk workers, contact the Nebraska Occupational Safety and Health Surveillance Program at www.dhhs.ne.gov/publichealth/occhealth.

Enforcement

OSHA Enforcement Activities

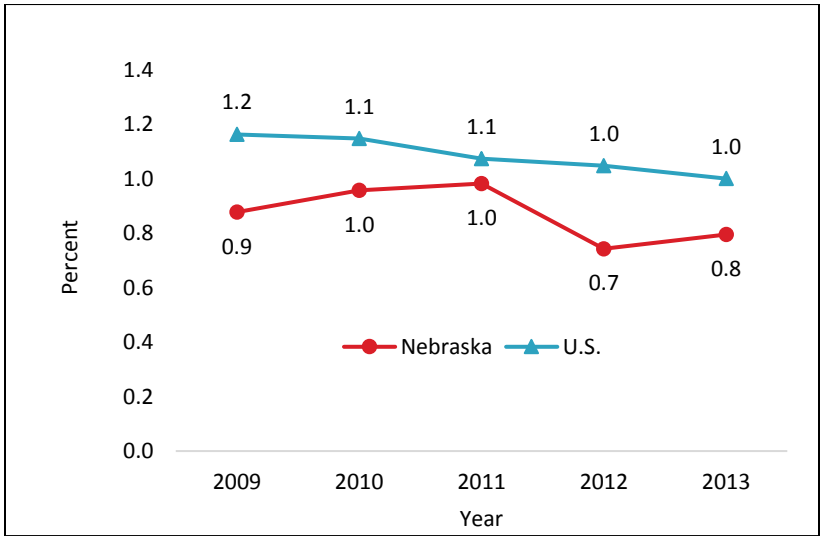
The Occupational Safety and Health Act of 1970 was passed by Congress to assure safe and healthy working conditions for every working person in the nation. The Act established the Occupational Safety and Health Administration (OSHA) under the U.S. Department of Labor. In addition to health and safety standard development, education, and compliance assistance, OSHA conducts worksite inspections and investigations to determine whether employers are complying with standards issued by the agency. Nebraska tracks enforcement activities using data provided by OSHA. Nebraska is a federal OSHA state, which means state and local government employees and worksites are not covered by OSHA.

In 2013, 513 establishments in Nebraska were inspected by OSHA. The estimated percentage of all Nebraska establishments under OSHA jurisdiction inspected by OSHA was 0.8%. The percentage of OSHA-inspected establishments is lower than the U.S. percentage.

Number of establishments inspected by OSHA, Nebraska, 2009-2013

	Year				
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**
Number of establishments inspected by OSHA	486	530	548	462	513

Estimated percentage of all establishments under OSHA jurisdiction inspected by OSHA, Nebraska and the U.S., 2009-2013



About the Data

Data Sources: OSHA Annual Reports of Inspections (numerator); BLS Quarterly Census of Employment and Wages (denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about OSHA inspections in Nebraska, contact the OSHA Omaha Area Office at https://www.osha.gov/oshdir/ne.html.

Costs of Injury and Illness

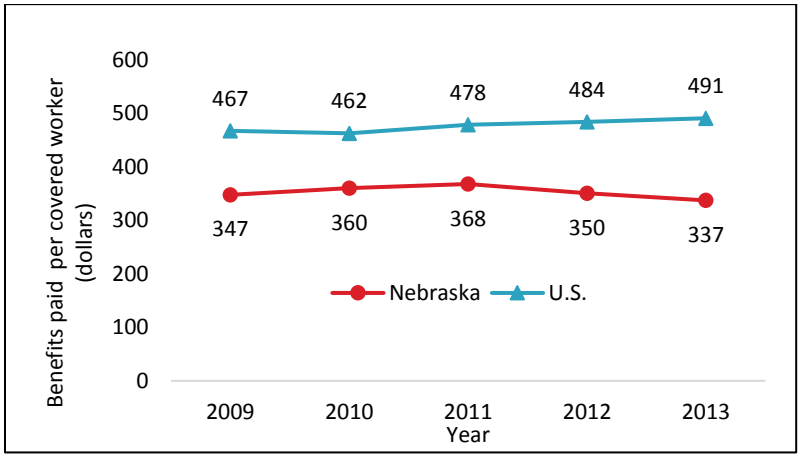
Work-related injuries and illnesses result in significant costs for workers, employers, insurers, and the health care system. Workers' compensation is an insurance program that provides benefits to partially replace lost wages and pay for medical expenses associated with a work-related injury, illness, or death. In 2013, $63.6 billion in workers' compensation total benefits were paid to workers in the United States. Nebraska tracks costs of work-related injuries and illnesses using data obtained from the National Academy of Social Insurance (NASI).

In 2013, $305 million in workers' compensation benefits were paid in Nebraska, which was slightly lower than in 2012. The average amount of workers' compensation benefits paid per covered worker in Nebraska in 2013 was $337, which was lower than the national average.

Total amount of workers' compensation benefits paid, Nebraska, 2009-2013

	Year				
Indicator	**2009**	**2010**	**2011**	**2012**	**2013**
Amount of workers' compensation benefits paid (in millions of dollars)	$304	$313	$321	$312	$305

Average amount of workers' compensation benefits paid per covered worker, Nebraska and the U.S., 2009-2013



About the Data

Data Sources: National Academy of Social Insurance (NASI) (numerator & denominator). For additional information about methodology and limitations, see Page 6.

Additional Resources

For more information about workers' compensation benefits, visit the NASI Website at https://www.nasi.org/research/workers-compensation. For more information about workers' compensation in Nebraska, visit the Nebraska Workers' Compensation Court Website at http://www.wcc.ne.gov/.

Conclusion

In the United Sates, more than 3.6 million nonfatal workplace injuries and illnesses and 4,821 worker fatalities occurred in 2014, according to Bureau of Labor Statistics. Occupational injuries, illnesses, and fatalities affect workers and their families, employers, and the U.S. economy. The total estimated costs of work-related injuries and illnesses in the U.S. was approximately $250 billion per year in 2007 (1).

The Nebraska Occupational Health Surveillance Program uses Occupational Health Indicators to describe worker health and safety and track injury and illness trends for Nebraska. Occupational Health Indicators are calculated using standardized methods developed by CSTE and NIOSH. This report includes Nebraska Occupational Health Indicator data using the most recent data available from several national and state sources, and multiple years of data were included to assess and compare trends over time.

Employment data highlighted in this report show important changes in Nebraska's employed population. The total number of employed persons in Nebraska increased to 983,000 in 2014, an increase of 46,000 workers since 2009. The proportion of Nebraska's employed population aged 65 years or older increased to 6.5% in 2014 from 5.1% in 2009. The proportion of Nebraska's Hispanic employed population increased to 9.9% in 2014 from 7.4% in 2009. Nearly a quarter of Nebraska's employed population works in the Education and Health Services industry super-sector, and more than 1 in 10 are employed in Professional and Related Occupations.

In 2014, 55 fatal work-related injuries occurred in Nebraska, and an estimated 23,100 nonfatal work-related injuries and illnesses were reported by Nebraska private sector employers. Nebraska continues to have a higher rate of fatal work-related injuries compared to national average. Rates of nonfatal work-related injuries and illnesses were also higher compared to the United States, however, nonfatal injury and illness rate are decreasing. Rates that also declined included the rate of all pneumoconiosis hospitalizations and the rate of work-related musculoskeletal disorders of the back. Nebraska's work-related pesticide poisoning rate decreased compared to 2009, but the rate was more than twice the national average rate in 2013.

Some occupational indicators showed an increasing trend since 2009. Nebraska's rate of work-related hospitalizations for severe traumatic injury increased in all but one year since 2009. The prevalence rate of residents with an elevated blood lead level (BLL) was higher compared to 2009, and the estimated rate of work-related musculoskeletal disorders (MSDs) with days away from work was also higher compared to the rate in 2009.

Despite significant improvements in worker health and safety over the past several decades, additional efforts are needed to prevent fatal and nonfatal workplace injuries and illnesses in Nebraska. The ongoing collection, analysis, and dissemination of occupational health and safety data help monitor trends, identify priorities and emerging issues, and evaluate interventions. Stakeholders can use this information to guide prevention and intervention activities aimed at reducing occupational injuries and illnesses and improving worker health and safety in Nebraska.